**Video Transcript: "Interview with Dr. Anthony Fauci on "Mississippi Baby"**
July 11, 2014

The more we learn the more we move forward. We are at NIH to talk to Dr. Tony Fauci about the "Mississippi baby."

Doctor, can you tell us about the announcement that was made this week?

Well, the Mississippi baby, as many people know now because it got considerable publicity, was a child that was born of a mother who was HIV infected but who, unfortunately, had no pre-natal care and was not receiving antiretroviral drugs. And at the time of birth, within the first 30 hours of birth, the baby was put on a therapeutic dose regimen of antiretroviral drugs as opposed to waiting to see if the baby was infected and only giving him a prophylactic or a prevention dose. As it turned out, the aggressive approach towards the baby was the right choice because the baby turned out to be infected. The baby was treated with combination antiretroviral drugs for 18 months and then was unfortunately lost to follow-up. And over that period of time the baby was not receiving any antiretroviral drugs and when the baby returned to clinic, which was 5 months later, the physicians examined the baby and found to their surprise that there was no detectable virus at all—no detectable viremia and no detectable virus by sensitive probes. So rather than put the baby back on antiretroviral therapy, the thought occurred that possibly because of the early aggressive treatment of the baby, that the baby was actually possibly cured of their HIV. And in order to determine if this was the case, they followed the baby very closely for months and months. And as the months went by, it looked more favorable that this possibility of a cure was a reality and this got a lot of attention worldwide as the "cure" of the Mississippi baby. But unfortunately as time went by, at 27 months of being off therapy, and at 46 months of age, the baby came in for a routine visit because the baby obviously was being followed very carefully by Dr. Hannah Gay who was the pediatrician involved from the very beginning. And on a routine visit, the labs were drawn and they noticed that the CD4 count was lower than it had been in the past so they sent a sample for a viral load which had been negative the last time it was done and had been consistently negative. And they found to their surprise that the baby had an unequivocal rebound of the virus. It wasn't just a blip of the viremia; it was a clear cut rebound. Interestingly, the baby felt perfectly well, had no symptoms whatsoever, and was just doing really quite well. So they went there and they put the baby back on combination antiretroviral drugs and already, literally within a week or so, the virus is already on its way down in favorable response to the antiretroviral therapy. So this is obviously disappointing, but it really is telling us the complexity of the issue of the reservoir, even a reservoir that we can't detect.

What the HIV community needs to understand is when you talk about the concept of a cure, or a sustained virological remission, which I think is probably a more appropriate terminology for this, since you don't know if you have a cure unless you have a history of how long one goes without having viral rebound. But the lesson for this is that this is a very, very recalcitrant virus and the idea of thinking of a prolonged viral remission or even a cure, which is quite aspirational, that we are still in the very early discovery phase of this type of research. It's still in the research discovery phase; it's not in the implementation phase. And what we often get asked is: is this a

set back? And I don't mean to play down the disappointment, but when you are in the discovery phase of research, you are going to fail more often than you succeed. So I certainly don't think this is a step forward, but it is not a step backward because there is a lot to be learned. For example, that you can go 27 months with no immune response that you can measure and yet the virus doesn't rebound, so the real critical question is: what was it that was keeping that virus from rebounding if there wasn't even a detectable immune response? And it tells us something that is very sobering: that our assays for the reservoir, our surrogate markers for a reservoir, are woefully inadequate. Because the markers were telling us we can't find replication competent virus and clearly replication competent virus was there, as we sadly know now with the rebound of the viremia.

The overall research efforts involve several things; it's getting what we have in our treatment armamentarium and perfecting it. And perfecting it means everything from newer, better drugs to suppress the virus and hopefully the reservoir; longer acting drugs to address the issue of adherence both in infected people, as well as in people who are trying to get on pre-exposure prophylaxis; to understand better the science and the depth of the lack of knowledge that we have about reservoirs; and then there is the whole issue of prevention. The vaccine is still very, very much something that is essential, I believe, for a durable control of this pandemic and a durable ending to the pandemic. So we have better treatments, we have the aspiration of a cure, and we have prevention, particularly in the form of a vaccine. So the research agenda has a lot of possibilities and we are still striving, even though we have made very many advances, including what I think is the historic accomplishment of putting people on antiretroviral drugs and essentially allowing them to live an almost normal lifespan. That is an extraordinary accomplishment, but there is still much, much more to do.

Sir we thank you for your time.

You're quite welcome. Happy to be here.